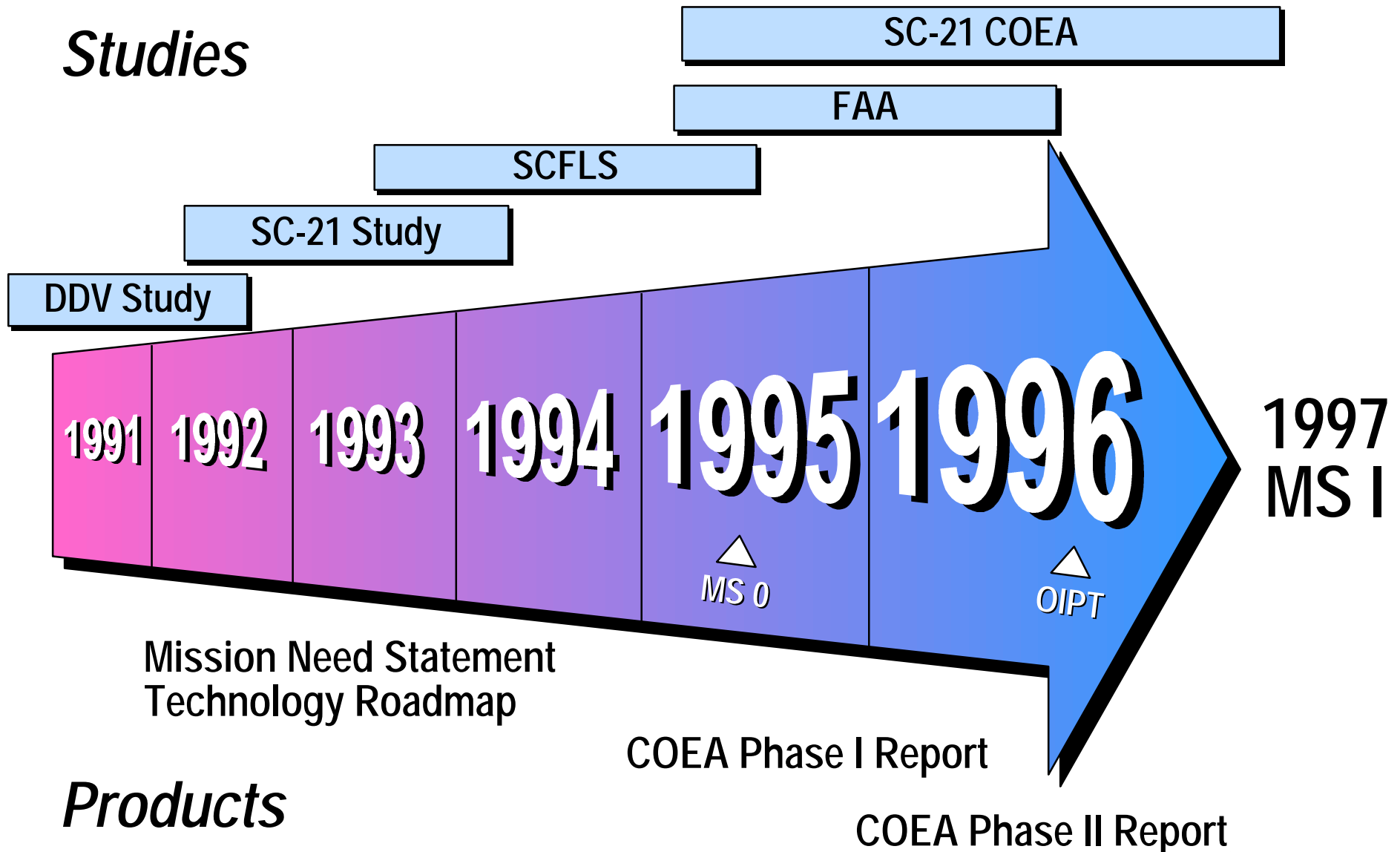


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# *SC-21 Program*

# SC-21 Heritage





*"The Navy is so pre-occupied  
defending itself it is afraid to  
engage"*

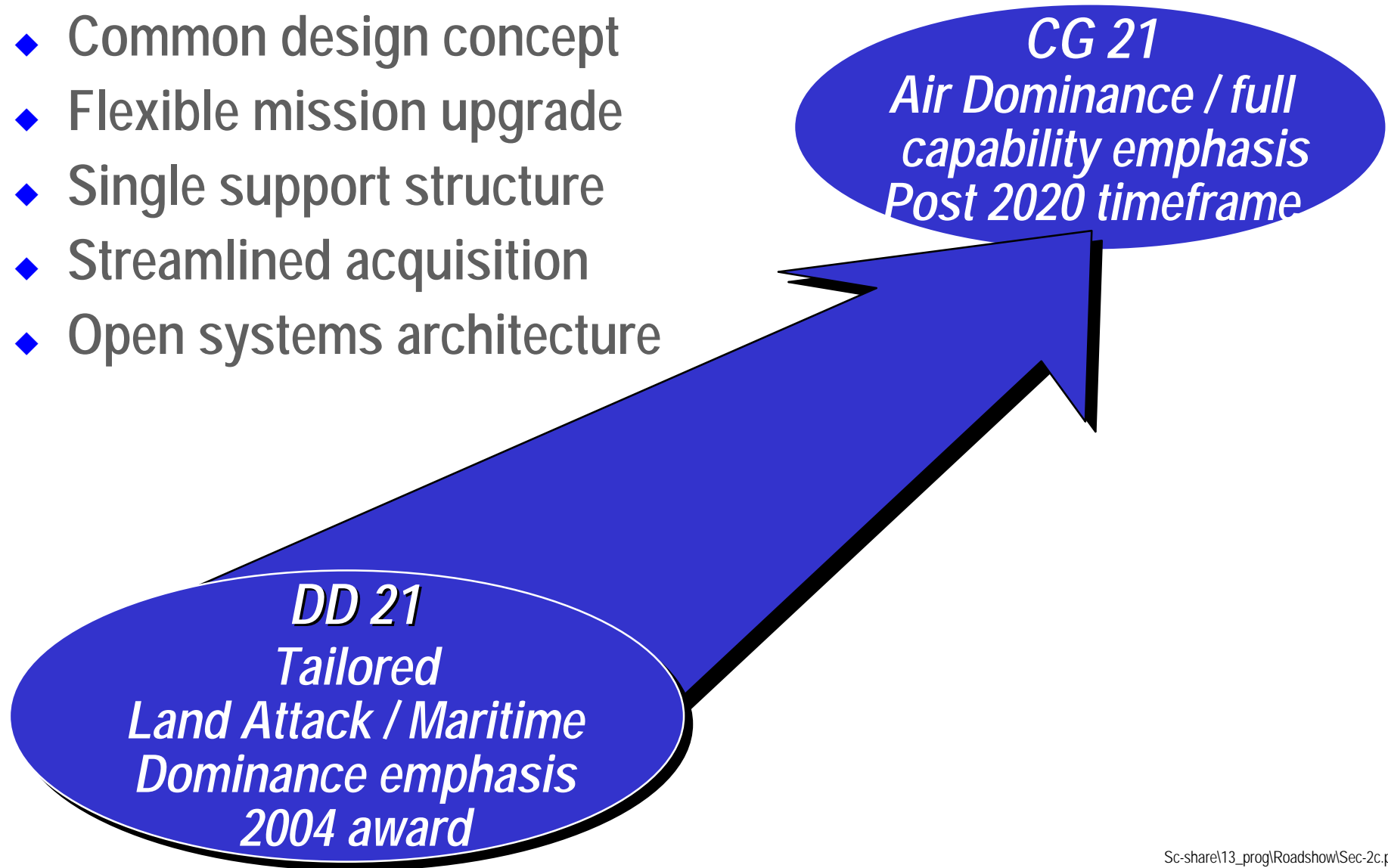
*General Douglas MacArthur*

SC-21 must be capable of offensively engaging  
across the spectrum -- and give troops ashore the  
assurance it *will keep them engaged*

# *SC-21 Family of Ships*

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- ◆ Common design concept
- ◆ Flexible mission upgrade
- ◆ Single support structure
- ◆ Streamlined acquisition
- ◆ Open systems architecture



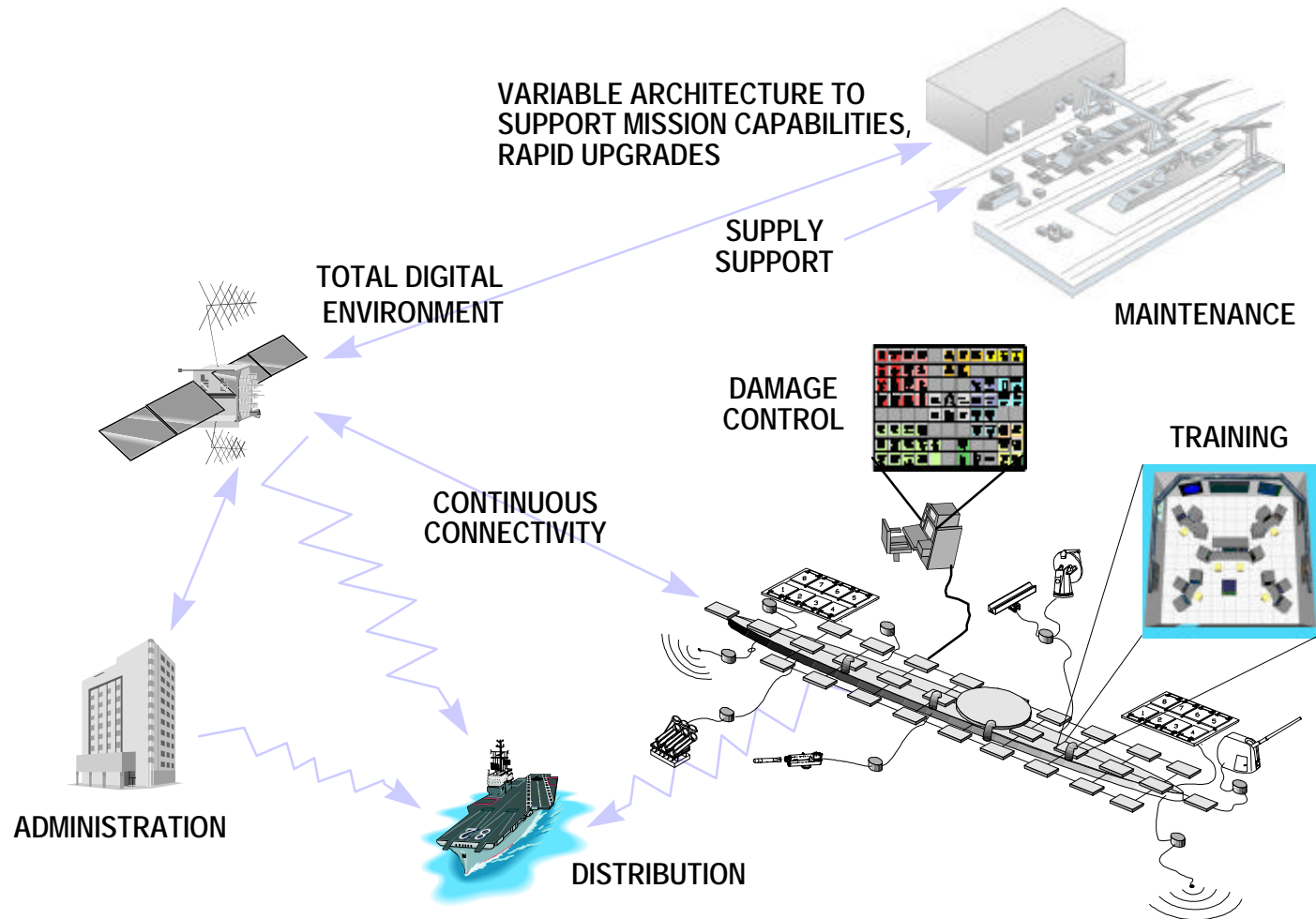
# *Imperatives for the 21st Century*

---

- ◆ Layered offense
- ◆ Joint warfighting
- ◆ Reduced signature
- ◆ Optimum manning
- ◆ Upgradeability
- ◆ Modularity

Total Ship Systems Engineering

# System Concept

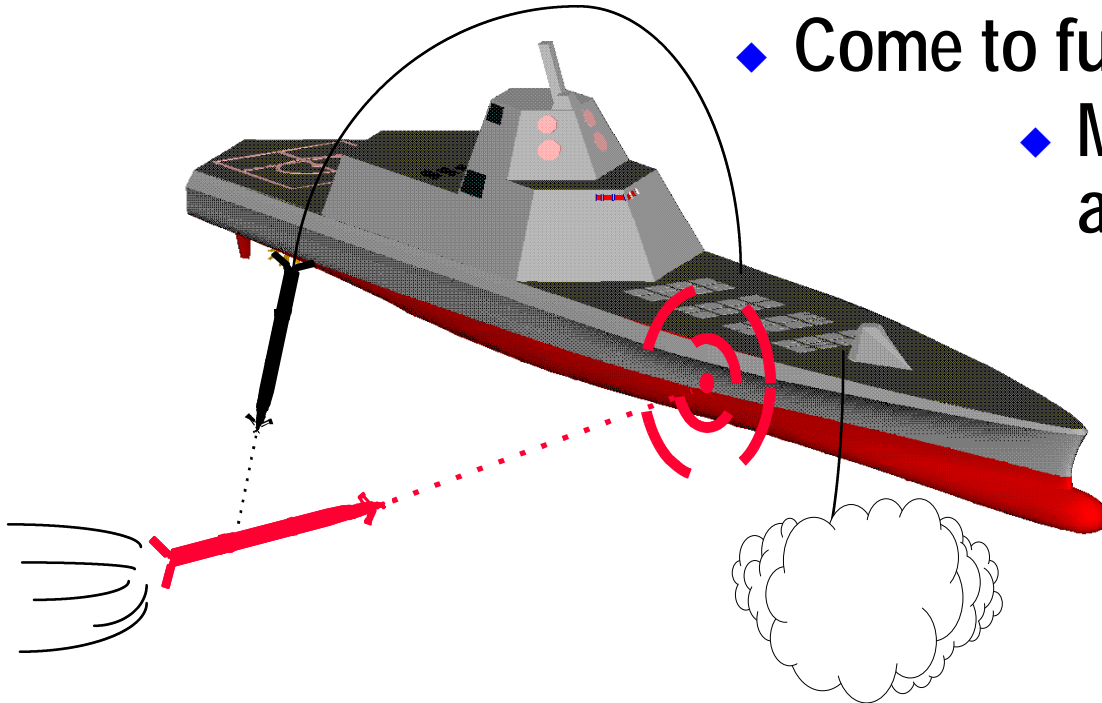


DD 21 is first time *"Total" system integration* for a ship

# *Total Ship Systems Approach*

---

- ◆ Sound GQ
- ◆ Redistribute computing plant
- ◆ Redistribute electrical power for battle
  - ◆ Reconfigure damage control / firemain per doctrine
  - ◆ Come to full power
    - ◆ Maneuver for decoys and offensive weaponry



# *What Are We Doing Differently?*

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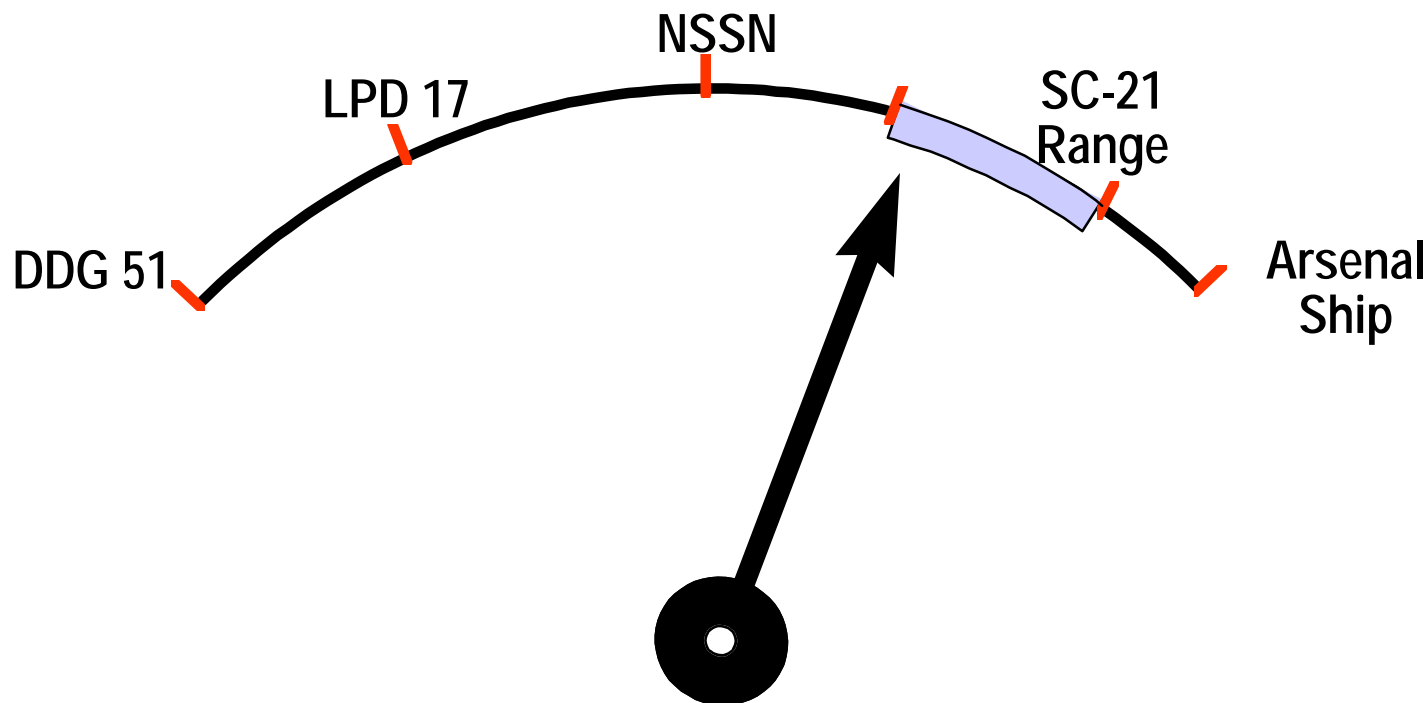
- ◆ Acquisition strategy
- ◆ Manning optimization
- ◆ Computing architecture
- ◆ Supportability
- ◆ Simulation-based acquisition
- ◆ Technology insertion
- ◆ Environmental program
- ◆ Ship signature
- ◆ Cost estimation
- ◆ Tech Team 21



# *Acquisition Strategy*

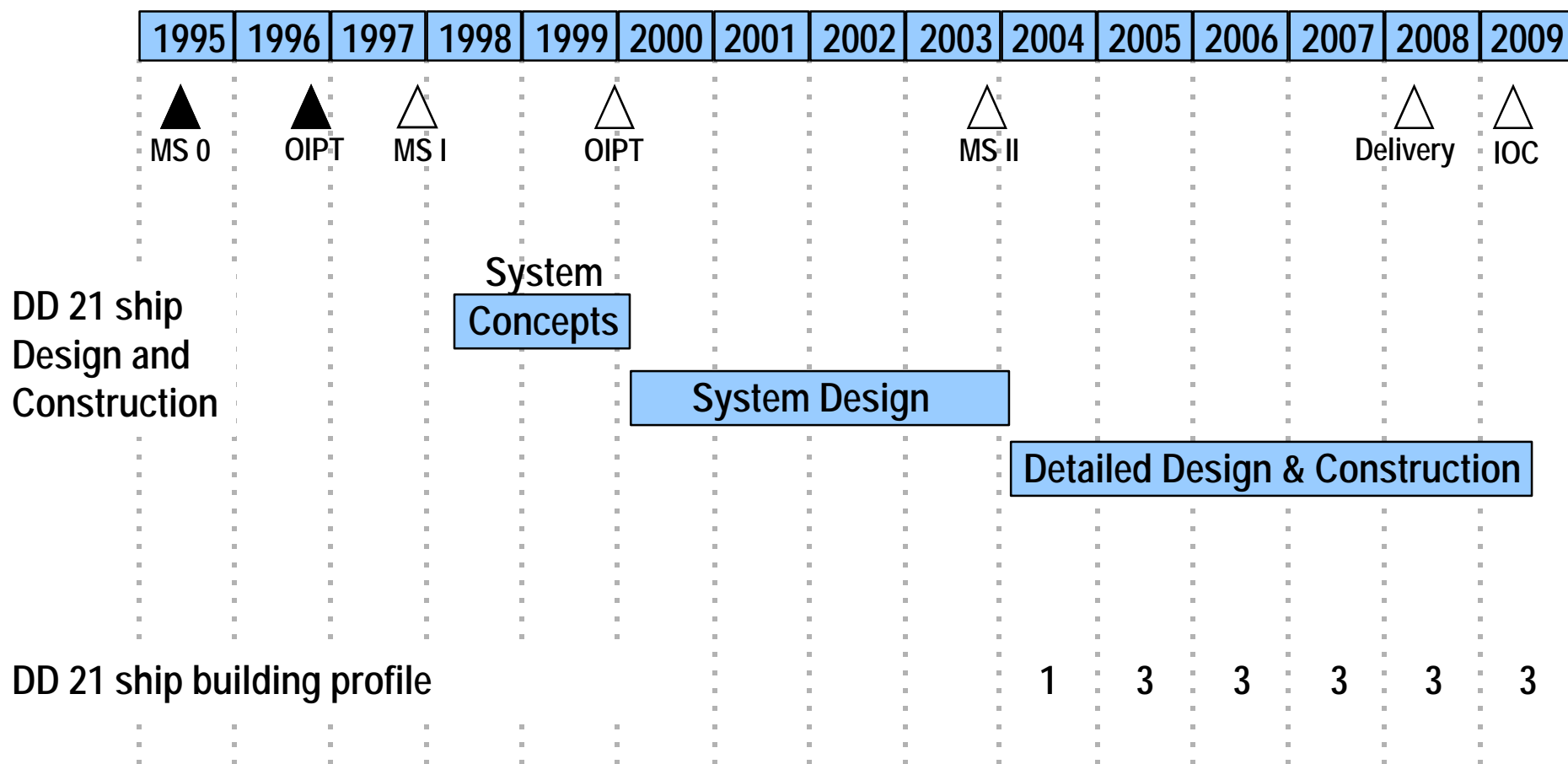
# *Acquisition Reform Meter*

Degree / Timing Of  
Industry Involvement



*SC-21 Acquisition process will have early  
industry involvement*

# Acquisition Schedule



Total DD 21 Acquisition ~ 32 ships

# *Acquisition Strategy*

---

## *Government*

- ◆ Lead / manage program
- ◆ Provide ORD, Performance Specification and Statement of Objectives
- ◆ Computer program certification and tactical training
- ◆ Government vs. Commercial equipment decisions
- ◆ Member of industry IPPD teams

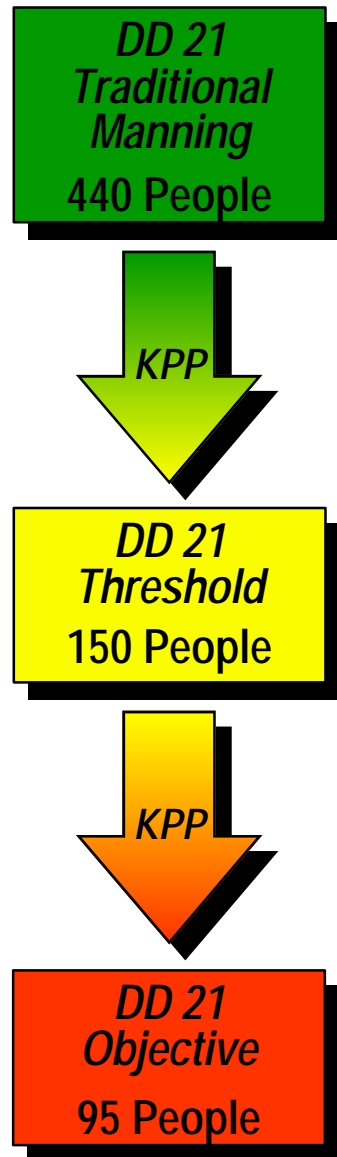
## *Industry*

- ◆ Provide system concepts
- ◆ Perform engineering development
- ◆ Provide detailed specifications
- ◆ Acquire systems the most affordable way using life cycle cost as the driver
- ◆ Execute CAIV within objective / threshold requirement

***Comply with total ship systems engineering approach***

# *Manning Optimization*

# DD 21 Manning Challenge



## Must Do:

- ◆ Maintain focus on life cycle cost instead of acquisition cost
- ◆ Change traditional Navy approach to shipboard manning
- ◆ Change current maintenance system & philosophy
- ◆ Focus Navy-wide management attention
  - Priority
  - Funding

*Institutionalize optimized manning requirements throughout acquisition force*

*No 1 PM issue*

# *DD 21 Manning Integrated Product Team (Proposed)*

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- ◆ Chartered by N86
- ◆ Mission -- determine optimum manning requirements
- ◆ Personnel must be optimized to ensure only **essential** and **necessary** shipboard functions are performed

*Bring the Navy's best and brightest to overcome manning optimization challenges*

# *Navy Wide Impacts*

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## Manning IPT



- ◆ Rating Consolidation and Skill Level Mix
  - ◆ Training Strategy
  - ◆ Career Progression

Impacts

Recruiting Strategy

Shore Infrastructure

Rotating Crew Plan

Forward Basing

Maintenance Plan

*Logistics*



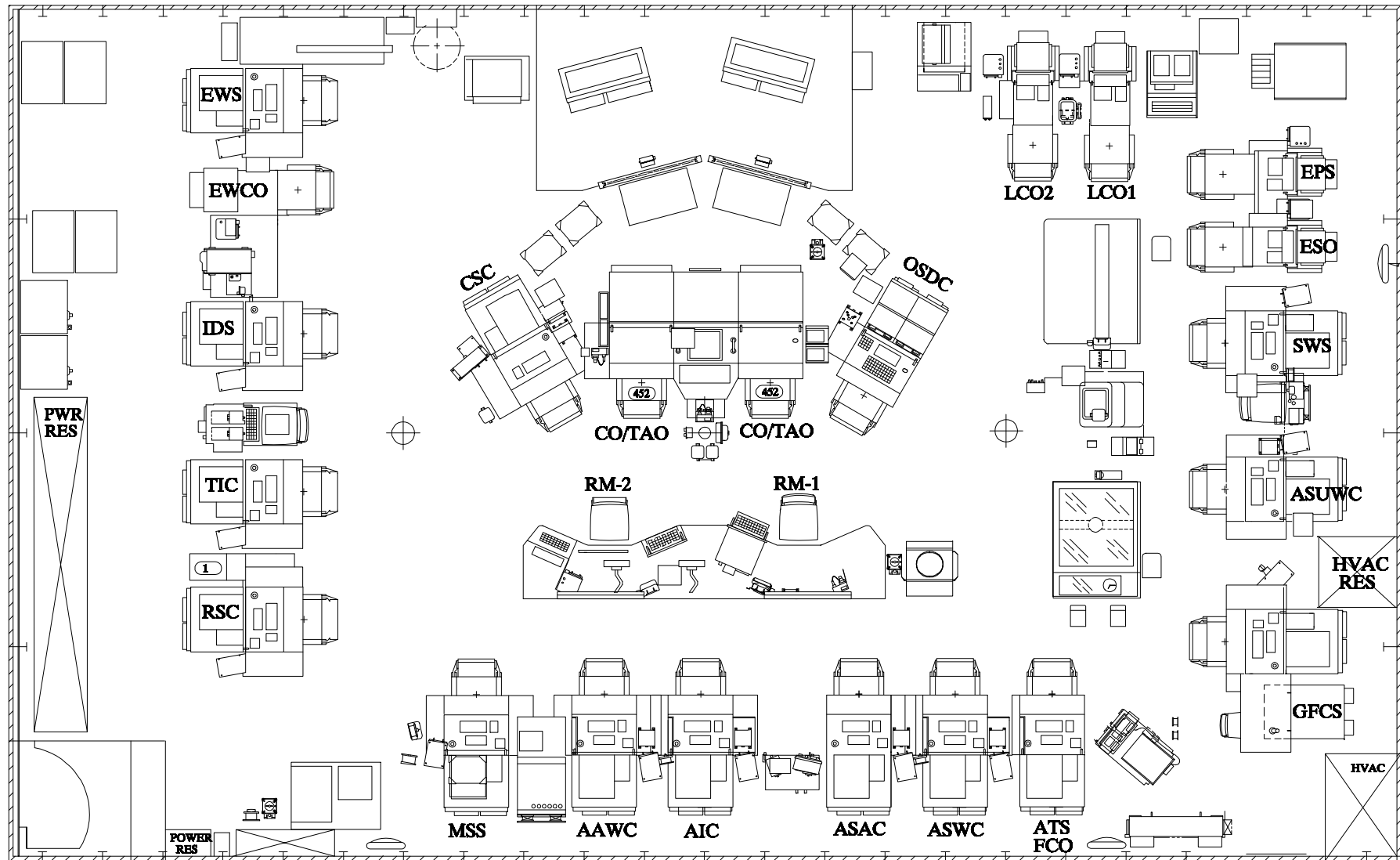
# Call for Action

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- ◆ CNO / CINCs / ASN(RDA)
- ◆ CINCs
- ◆ CNO / CHNAVPERS / CNET / TYCOMs
- ◆ TYCOMs
- ◆ ONR / SYSCOMs / PEOs / OPNAV
- ◆ Industry / SYSCOMs / PEOs
- ◆ SYSCOMs/PEOs/Industry
- Institutionalize the process
- Fleet commitment to implementation
- Policy changes
- Prepare fleet to accept change
- New R&D focus
- Ship design innovations
- Application of emerging technology

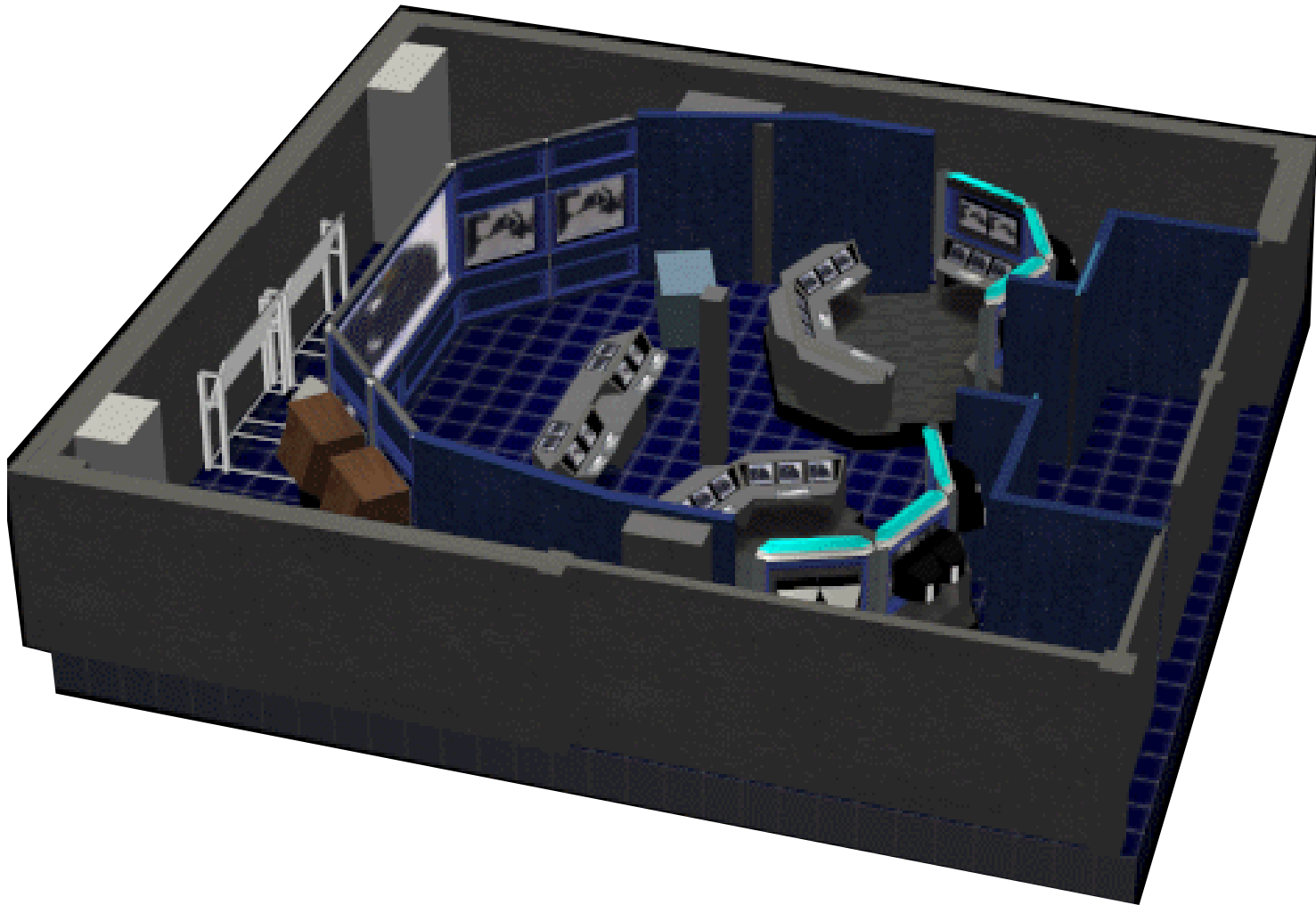
*Requires institutional changes in traditional ways we have both approached and viewed ship manning*

# CG 52 Combat Information Center



# *CLC of the Future*

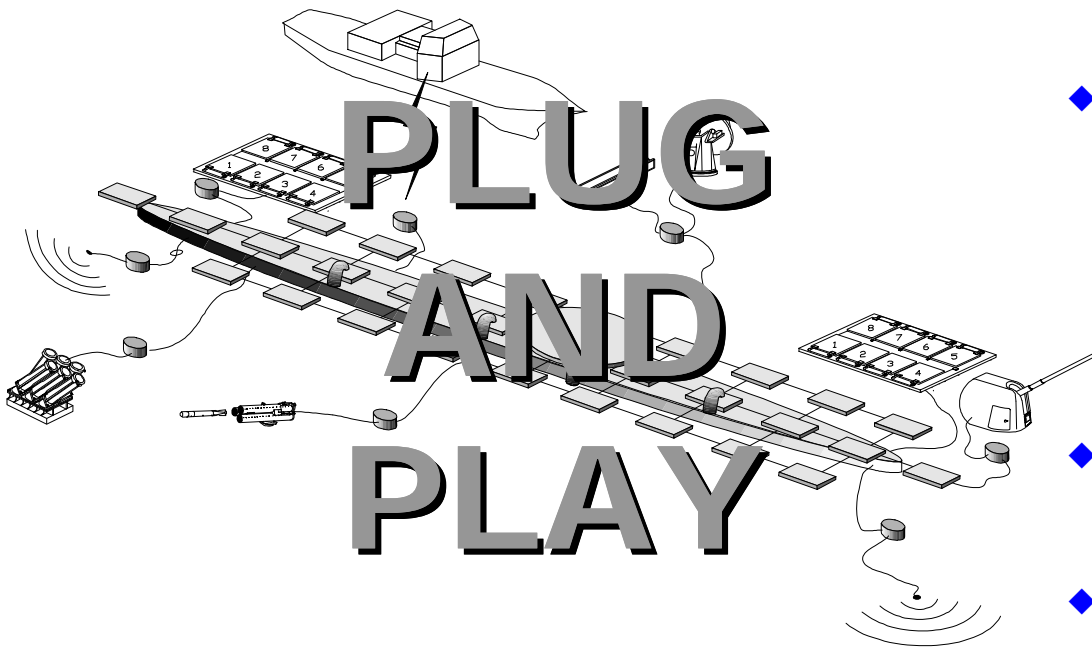
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# *Computing Architecture*

# ADCON-21

*No 2 PM issue*

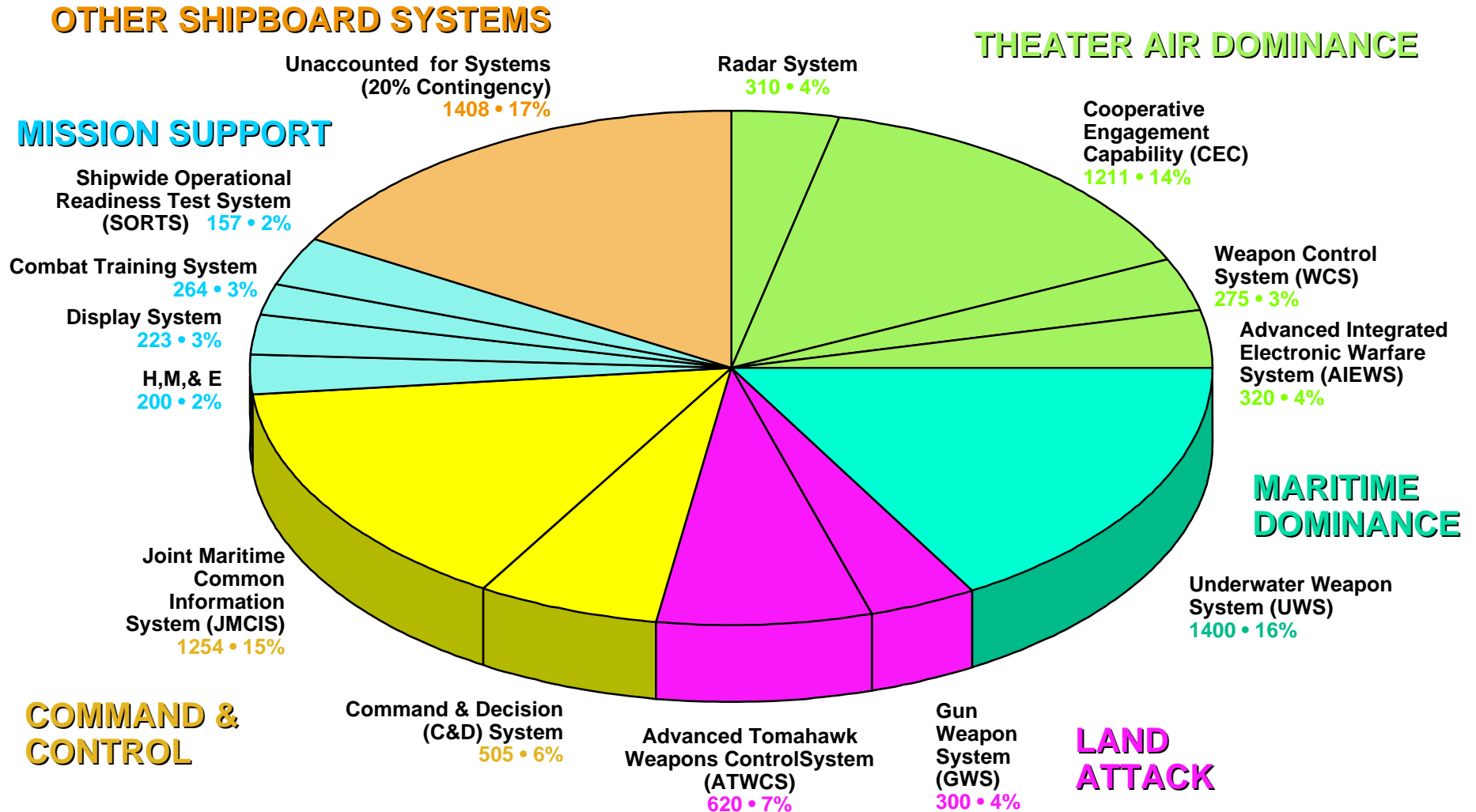


- ◆ Real-time total ship computer & information distribution infrastructure
- ◆ Allows warfighter to perform mission at any console
  - Combat system tasks
  - Ship system tasks
  - Mission support tasks
- ◆ Distributed open system computer architecture
- ◆ Allows PARMs to “bring their computer programs, not their computers and displays”

*A common, shipwide, tactical “Open System” computer and ship control architecture for the Navy*

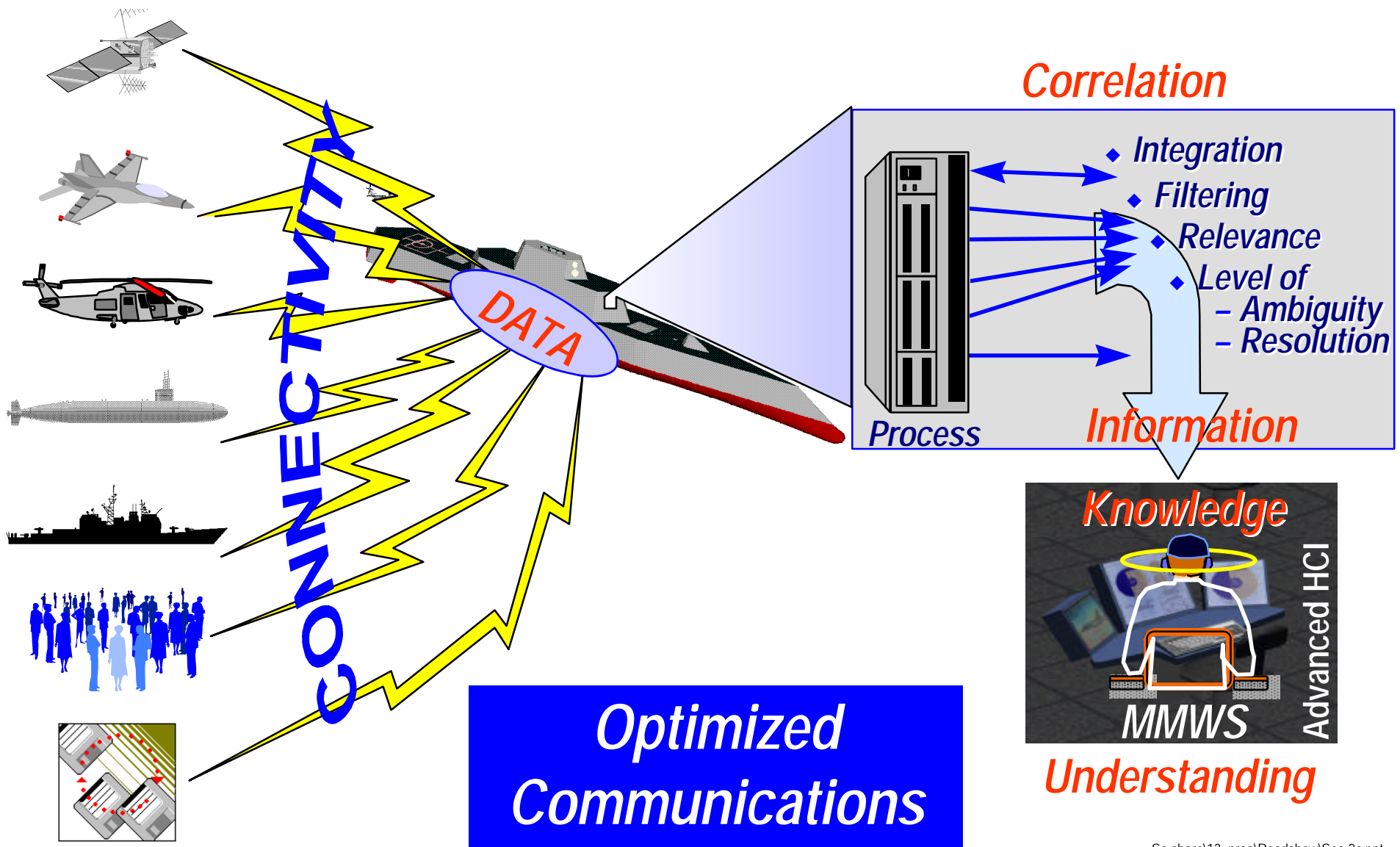
# DD 21 Computer Programs

TOTAL KSLOCs (est): 8447



# *Logistics*

# Knowledge Superiority





# *Fleet View*

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- ◆ “Our ultimate goal is not for more efficient maintenance, it’s for no maintenance at all”

*RADM Clark  
CINCLANFLT  
Maintenance Officer*

- ◆ “With less time spent in extended maintenance periods, a ship can maintain a higher level of operational readiness (83% vice 68%)”

*taken from  
VADM Krekich  
CNSP Maintenance Vision*

# *Quality of Life*

## *Remember the Sailor*

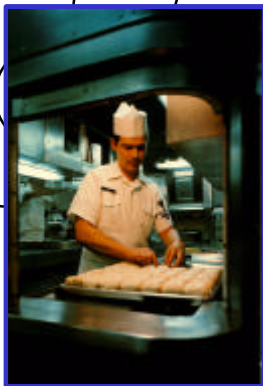
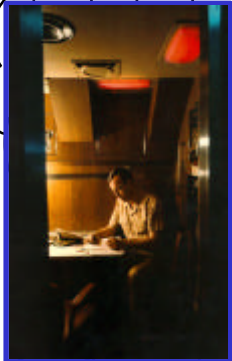
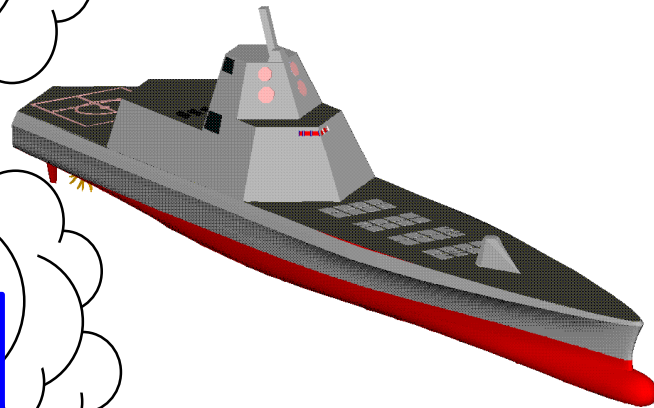
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*Modern Staterooms*

*Modern Fitness Areas*

*Automated Galley*

*Automated Laundry*



# *Maintenance Free Ships*

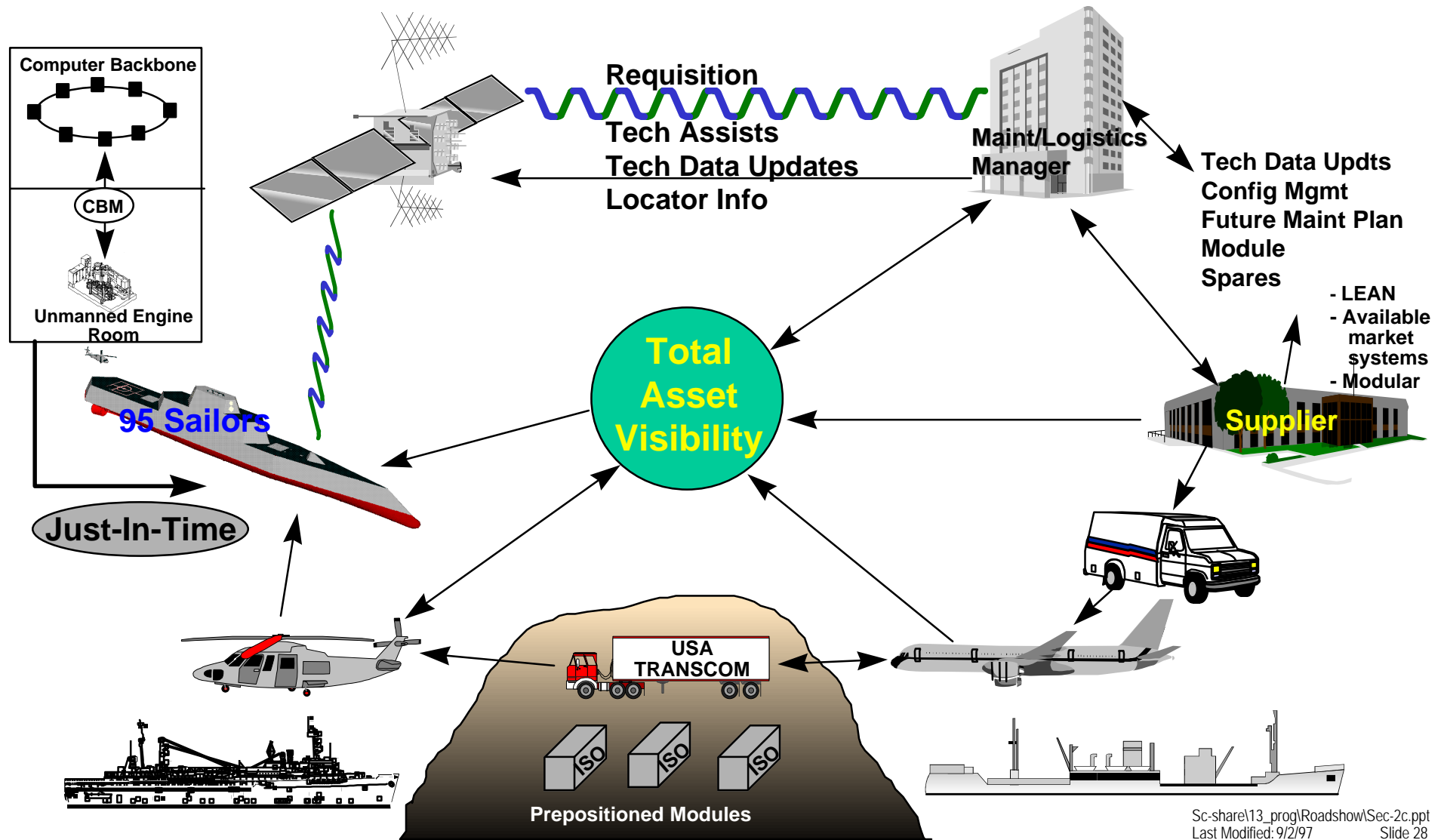


- ◆ Free sailors from traditional maintenance / preservation duties
- ◆ Apply emerging technologies
- ◆ Privatize preservation that cannot be engineered away



*Allow sailors to be fighters vice “Rust Busters”*

# *Improved Logistics Response Time .... Maximum Asset Availability*



# *Logistics IPT (Proposed)*

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- ◆ Chartered by OPNAV N4
- ◆ Mission -- Develop a roadmap to ensure DD 21 logistics support meets the warfighter's needs in both peacetime and war
  - Policies
  - Processes
  - Business Systems

*Bring Navy's best and brightest to overcome  
SC-21 logistics challenges*